**2022-2023**

**Degree Map:** [**Applied Physics BS**](https://stockton.edu/sciences-math/physics.html)

Physics Program

School of Natural Sciences & Mathematics | Stockton University

USC 1 – 240 | 609-652-4546

The following is a **suggested** plan of study for completion of this degree program.

The **goal of a Degree Map** is to ensure that students graduate with no more than 128 credits and in four years.

* All students should speak with their preceptor about their academic programs.
* Students are encouraged to take overload and Summer courses to facilitate their progress towards graduation as necessary.
* Transfer students may not need to take all courses in the plan; they should consult with an academic advisor.

| **FIRST YEAR - FALL** | **Credit** | **FIRST YEAR - SPRING** | **Credit** |
| --- | --- | --- | --- |
| **Course load** | **15-19** | **Course load** | **15-19** |
| FRST or G-course  **Attribute:** First Year Seminar | **4** | ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** |
| **[Optional]** ASD or G-course  **Optional Attributes:** W1 and A, H, I, R, and/or V | **4** | **[Optional]** ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** |
| PHYS 2220/25 Physics I w/lab1, 2  **Attribute:** Q1 | **6** | PHYS2230 Physics II w/lab1, 2  **Attribute:** Q1 | **6** |
| MATH 2215 Calculus I  **Attribute:** Q1 | **5** | MATH 2216 Calculus II  **Attribute:** Q1 | **5** |

| **SECOND YEAR - FALL** | **Credit** | **SECOND YEAR - SPRING** | **Credit** |
| --- | --- | --- | --- |
| **Course load** | **17** | **Course load** | **16** |
| ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** | ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** |
| ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** | PHYS 3110 Electronics  **Attribute:** Q2, W2 | **4** |
| PHYS 3010 Physics III1 **[Fall only course]**  **Attribute:** Q1 | **4** | PHYS 3345 Math Methods for Engineering & Science **Attribute:** Q1 | **4** |
| MATH 2217 Calculus III  **Attribute:** Q1 | **5** | Cognate Course3 | **4** |
|  |  | PHYS 2600 Physics Colloquium4 | **0** |
|  |  | PHYS 4620 Research Methods4 | **0** |

| **THIRD YEAR - FALL** | **Credit** | **THIRD YEAR - SPRING** | **Credit** |
| --- | --- | --- | --- |
| **Course load** | **16** | **Course load** | **16** |
| ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** | ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** |
| ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** | PHYS 3220 Classical Mechanics  **Attribute:** Q2 | **4** |
| PHYS 3390 Quantum Mechanics **[Even Years] OR** PHYS 3370 Electricity and Magnetism **[Odd Years]** | **4** | PHYS 3380 Thermal Physics **[Odd Years]****OR** PHYS 3340 Optics **[Even Years]** | **4** |
| Cognate Course3 | **4** | Cognate Course3 | **4** |
| PHYS 2600 Physics Colloquium4 | **0** | PHYS 2600 Physics Colloquium4 | **0** |
| PHYS 4620 Research Methods4 | **0** | PHYS 4620 Research Methods4 | **0** |
| PHYS 4800 Undergraduate Thesis **OR** PHYS 4900 Internship4 | **0-4** | PHYS 4800 Undergraduate Thesis **OR** PHYS 4900 Internship4 | **0-4** |

| **FOURTH YEAR - FALL** | **Credit** | **FOURTH YEAR - SPRING** | **Credit** |
| --- | --- | --- | --- |
| **Course load** | **16** | **Course load** | **16** |
| ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** | ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** |
| ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** | ASD or G-course  **Optional Attributes:** W1, W2, A, H, I, R, and/or V | **4** |
| PHYS 3370 Electricity and Magnetism **[Odd Years]OR** PHYS 3390 Quantum Mechanics **[Even Years]** | **4** | PHYS 3340 Optics **[Even Years]** 4 **OR** PHYS 3380 Thermal Physics **[Odd Years]** 4 | **4** |
| Cognate Course3 | **4** | Cognate Course3 | **4** |
| PHYS 2600 Physics Colloquium4 | **0** | PHYS 2600 Physics Colloquium4 | **0** |
| PHYS 4620 Research Methods4 | **0** | PHYS 4620 Research Methods4 | **0** |
| PHYS 4800 Undergraduate Thesis **OR** PHYS 4900 Internship4 | **0-4** | PHYS 4800 Undergraduate Thesis **OR** PHYS 4900 Internship4 | **0-4** |

**GRADUATION REQUIREMENT TRACKER**

|  |  |
| --- | --- |
| **Quantitative**  **Reasoning** | ü |
| Q1 (First year) |  |
| Q1/Q2 |  |
| Q2 |  |

|  |  |
| --- | --- |
| **At-some-distance** | ü |
| ASD |  |
| ASD |  |
| ASD |  |
| ASD |  |

|  |  |
| --- | --- |
| **G-course** | ü |
| GAH |  |
| GAH |  |
| GEN |  |
| GIS |  |
| GNM |  |
| GNM |  |
| GSS |  |
| GSS |  |

|  |  |
| --- | --- |
| **Attributes** | ü |
| A |  |
| H |  |
| I |  |
| R1 |  |
| R2 |  |
| V |  |

|  |  |
| --- | --- |
| **Writing Requirement** | ü |
| W1 (First year) |  |
| W1/W2 |  |
| W1/W2 |  |
| W1/W2 (3000 level or higher) |  |

**Program specific notes**

* An overall GPA of 2.0 or better in all NAMS courses and a grade of "C" or better in each program and cognate course, is required.
* Odd Years: e.g., 2019, 2021. Even Years: e.g., 2020, 2022. So, a Spring Odd Years course would be offered in Spring 2019, for example.
* All Q’s will be covered in degree courses. All *but* one W2 will be covered.
* 1 C or better in Physics I, II, and III is required to continue onto the intermediate and advanced physics courses.
* 2 Students transferring from other majors who have already taken Physics for Life Sciences (PHYS 2110 and PHYS 2120) may substitute PHYS I and PHYS II respectively, with approval from the Physics Program.
* 3Two cognates *must be*of 2000 level or above. Three cognates *must be* of 3000 level or above, **AND** two *must be* from the following list:

|  |  |
| --- | --- |
| * + PHYS 3120 Electrical Circuits   + PHYS 3030 Biomedical Physics | * + PHYS 3350 Mathematical Physics   + PHYS 3240 Modeling and Simulation |

* 4Four (4) semesters of PHYS 2600 Physics Colloquium, four (4) semesters of PHYS 4620 Research Methods, and one (1) semester of PHYS 4800 Undergraduate Thesis **OR** PHYS 4900 Internship *must* be completed.

**ADDITIONAL INFORMATION**

* **FIRST (FRST).** All newly admitted freshmen or transfer students with 15 or fewer credits are required to fulfill the University’s first-year competency requirement. The requirement may be met by demonstrating competency on the placement tests, or by passing, with a grade of C or better, all FRST courses: FRST 1101 – College Writing, 1002 – Critical Thinking and Reading, and 1103 – Quantitative Reasoning into which students have been placed. Students enrolled in FRST 1100 – Developmental Mathematics must receive a grade of C or better, and then enroll in and receive a grade of C or better in FRST 1103 to demonstrate competency. Full-time students must register for all required FRST courses in their first semester. Depending on time to completion of competency requirements, some students may need additional time for degree completion. *Note-* certain FRST courses also meet the requirements of the General Studies course distribution categories.
* **General Studies.** B.S. students must complete 48 credits of General Studies with the distribution requirement of: 8 GAH, 4 GEN, 4 GIS, 8 GNM, 8 GSS and 16 ASD (At Some Distance). See 2022-2023 Bulletin for more information. B.A. students must complete 64 credits of General Studies with the distribution requirement of: 8 GAH, 4 GEN, 4 GIS, 8 GNM, 8 GSS and 32 ASD.
* **W1/W2- Writing requirement.** Students are required to complete (C or better) four Writing intensive (WI/W2) courses. One W1 is required in the first year and an additional three W1 or W2 with one in the upper-level division (3000-level or higher). W1/W2 courses can be found in General Studies or Program/cognate courses depending on major.
* **Q1/Q2- Quantitative Reasoning.** Students are required to complete (D- or better) three Q1/Q2 courses. One Q1 in the first year and at least one Q2. Q1/Q2 courses may be found in General Studies or Program/cognate course depending on major.
* **R1/R2- Race and Racism.** Students are required to pass one R1 and another R1/R2 course. R1 (C or better), R2 (D or better). R1/R2 courses may be found in General Studies or Program/cognate courses depending on major.
* **Minor program.** Students may select a Minor program of study, in consultation with their preceptor. Minor courses would replace some of the ASD or Program/cognate courses in the Degree Map.
* **Attributes (AHVI/Q, W and R).** A course may fulfill multiple attributes and/or other requirements. Therefore, many attributes can be fulfilled without taking additional courses. Attributes can be taken in any order except for the first-year requirements. Many course choices are available to fulfill an attribute.
* **Transfer students.** Transfer students must take 25% of their remaining credits in General Studies with a GIS course required (The 25% Rule). Depending on transferred courses, individual attribute requirements may be met (AHVI/Q, W and R) but will be evaluated on transfer. For students transferring 64 credits or more, the General Studies course requirement is lowered to 16 credits (i.e. only four G courses are required, but all students must take 4 credits in the GIS category, the other three G courses can be any combination of the G course categories). Up to two W1 and two Q1 courses can be transferred, all W2 and Q2 courses need to be taken at Stockton. Up to one R1 or R2 can be transferred. Consult with an academic advisor for careful guidance.
* **Second degree.** Students with an earned degree will be exempt from all general studies course requirements (i.e. G courses, ASD) and AHVI/Q, W and R attributes.